

PATENT COOPERATION TREATY
PCT
INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)
(PCT Article 36 and Rule 70)

REC'D 17 AUG 2005
WIPO
PCT

BEST AVAILABLE COPY

Applicant's or agent's file reference JT217628-142	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/NZ2004/000117	International filing date (day/month/year) 3 June 2004	Priority date (day/month/year) 6 June 2003
International Patent Classification (IPC) or national classification and IPC Int. Cl. ⁷ G01R 31/36		
Applicant [INVENSYS ENERGY SYSTEMS (NZ) LIMITED et al] EATON POWER QUALITY LIMITED		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 3 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
 - a. ☒ (sent to the applicant and to the International Bureau) a total of 1 sheets, as follows:
 - ☒ sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or table related thereto, in computer-readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4. This report contains indications relating to the following items:

<input checked="" type="checkbox"/> Box No. I	Basis of the report
<input type="checkbox"/> Box No. II	Priority
<input type="checkbox"/> Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input type="checkbox"/> Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/> Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input type="checkbox"/> Box No. VI	Certain documents cited
<input type="checkbox"/> Box No. VII	Certain defects in the international application
<input type="checkbox"/> Box No. VIII	Certain observations on the international application

Date of submission of the demand 22 December 2004	Date of completion of the report 3 August 2005
Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustalia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer SUSHIL AGGARWAL Telephone No. (02) 6283 2192

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/NZ2004/000117

Box No. I Basis of the report

With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following language which is the language of a translation furnished for the purposes of:

☐ international search (under Rules 12.3 and 23.1 (b))

☐ publication of the international application (under Rule 12.4)

☐ international preliminary examination (under Rules 55.2 and/or 55.3)

With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

☐ the international application as originally filed/furnished

☒ the description:

pages 1-13 as originally filed/furnished

pages* received by this Authority on with the letter of

pages* received by this Authority on with the letter of

☒ the claims:

pages 14, 15, 17 as originally filed/furnished

pages* as amended (together with any statement) under Article 19

pages* 16 received by this Authority on 5 April 2005 with the letter of 5 April 2005

pages* received by this Authority on with the letter of

☒ the drawings:

pages 1-10 as originally filed/furnished

pages* received by this Authority on with the letter of

pages* received by this Authority on with the letter of

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages

☐ the claims, Nos.

☐ the drawings, sheets/figs

☐ the sequence listing (*specify*):

☐ any table(s) related to the sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

☐ the description, pages

☐ the claims, Nos.

☐ the drawings, sheets/figs

☐ the sequence listing (*specify*):

☐ any table(s) related to the sequence listing (*specify*):

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/NZ2004/000117

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

Statement

Novelty (N)	Claims 1-21	YES
	Claims NONE	NO
Inventive step (IS)	Claims 1-21	YES
	Claims NONE	NO
Industrial applicability (IA)	Claims 1-21	YES
	Claims NONE	NO

Citations and explanations (Rule 70.7)

Following documents were cited in the International Search Report:

D1: US 6411911 B1 (HIRSCH et al) 25 June 2002

D2: WO 1997/041448 A1 (TELEFONAKTIEBOLAGET LM ERICSSON) 6 November 1997

D3: US 4231026 (SULLIVAN) 28 October 1980

None of the above prior art documents discloses a method of battery monitoring wherein a battery voltage measurement is scaled with respect to at least a predetermined end voltage as defined in claims 1-21. The claims meet the criteria set out in PCT Articles 33(2-4).

BEST AVAILABLE COPY

12. A method of characterising a battery including:

- a) acquiring a plurality of battery voltage measurements from the battery, the battery voltage measurements including a start voltage and an end voltage;
- b) acquiring a plurality of time measurements, each time measurement being associated with a respective battery voltage measurement, the time measurements including an end time associated with the end voltage;
- c) determining a plurality of scaled voltage values by scaling each battery voltage measurement with respect to the start voltage and the end voltage;
- d) determining a plurality of scaled time values by scaling each time measurement with respect to the end time; and
- e) storing a battery discharge characteristic indicative of the relationship between the scaled voltage values and the scaled time values.

13. A method according to any of claims 1 to 10 wherein the predetermined battery characteristic used in step e) has been obtained by a method according to claim 12.

14. A method according to claim 13 further including the step of obtaining the predetermined battery characteristic by a method according to claim 11.

15. Software for configuring a system to perform a method according to any of the preceding claims.

16. A computer readable medium carrying software according to claim 15.

17. A system configured to implement the method of any of claims 1 to 14, the system including a sensor for acquiring the battery voltage measurements; a timer for generating the time measurements; and a processor for performing steps c) to e).